WHAT IS CLAIMED IS:

1. An ultra-high molecular weight polyethylene film:

(1) having a tensile strength from between about 0.7 GPa and about 5 GPa where said polyethylene has an intrinsic viscosity from between about 5 and about 50 db/g;

(2) that is stretched, fibrillated and slit into a micromesh tape suitable for use as an interproximal device having:

(1) a fibrillation density from between about 5% and about 90% of the total tape surface,
(2) a width from between about 0.035 and about 0.12 inches,
(3) a thickness from between about 0.001 and about 0.004 inches, and
(4) a denier from between about 200 and about 600;

wherein said micromesh interproximal device is coated with an oral care substance at from between about 10 and about 120 mg/yd and which, during flossing, releases substantial amounts of said coating while demonstrating ultra shred resistance and an entrapment factor of at least about two.

2. The ultra-high molecular weight polyethylene film according to Claim 1, wherein said stretching is achieved by a drawing means, wherein the total draw ration is from between about 80- and about 200-fold.

3. The ultra-high molecular weight polyethylene film according to Claim 1, wherein said fibrillating is achieved by fibrillating devices as illustrated in Figs. 5 and 6.

4. The coated ultra-high molecular weight polyethylene micromesh interproximal device according to Claim 1, wherein said coating with an oral care substances, is achieved by a coating means selected from the group consisting of: compression loading, injection loading and contact loading, and combinations thereof.

5. The coated ultra-high molecular weight polyethylene micromesh interproximal device according to Claim 1, wherein said oral care coating substance is selected from the group consisting of: high melt viscosity mixtures, high melt viscosity emulsions, medium melt viscosity mixtures, medium melt viscosity emulsions, low melt viscosity mixtures and low melt viscosity emulsions, and combinations thereof.

6. The coated ultra-high molecular weight polyethylene micromesh interproximal devices according to Claim 5, wherein said high melt viscosity mixtures and high melt viscosity emulsions are compression loaded into said micromesh at levels from between about 10 and about 120 mg/yd and said high melt viscosity mixtures and emulsions comprise saliva soluble, substantially crystal-free coatings containing oral care substances selected from the group consisting of hedonic agents, cleaners, chemotherapeutic agents, Soft Abrasives™ and mixtures thereof.

7. The coated ultra-high molecular weight polyethylene micromesh interproximal devices according to Claim 5, wherein said medium melt viscosity mixtures and medium melt viscosity emulsions are injection loaded into said micromesh at levels from between about 10 and about 120 mg/yd and said medium melt viscosity mixtures and emulsions comprise coatings selected from the group consisting of:

(1) saliva soluble, substantially crystal-free coatings containing oral care substances selected from the group consisting of hedonic agents, cleaners,

chemotherapeutic agents, Soft Abrasives™ and mixtures thereof:

(2) saliva gelling, slowly soluble mixtures containing oral care substances selected from the group consisting of hedonic agents, cleaners, chemotherapeutic agents, Soft Abrasives™ and mixtures thereof; and

(3) mixtures of (a) and (b).

8. The coated ultra-high molecular weight polyethylene micromesh interproximal devices according to Claim 5, wherein said low melt viscosity emulsions are contact loaded onto said micromesh at levels from between about 10 and 120 mg/yd and said low melt viscosity mixtures and emulsions comprise coatings selected from the group consisting of:

saliva soluble coatings
saliva insoluble coatings, and
mixtures of (a) and (b).

9. An ultra-high molecular weight polyethylene micromesh tape suitable for use as an interproximal device, wherein the dispensing means for said tape is selected from the group consisting of bobbin based dispensers and single dose dispensers.

10. A shred-resistant, ultra-high molecular weight polyethylene, micromesh interproximal device produced by fibrillating stretched polyethylene tape having a tensile strength from between about 0.7 GPa and about 5 GPa, where said polyethylene has an intrinsic viscosity of from between about 5 and about 50 dl/g; and wherein said device is coated with a saliva-soluble, substantially crystal-free coating at a load from between about 10 and about 120 mg/yd.

11. A method of manufacturing the micromesh interproximal device of Claim 1, wherein said stretched polyethylene tape is run at a transfer speed from between about 1 and about 1000 m/min and said fibrillating is carried out simultaneously with a rotary fibrillator positioned in fibrillating contact with said polyethylene tape and run at a rotational line speed from between about 10 and about 3000 m/min and said coating is carried out at between about 1 and about 5 yards per second.

12. A method of manufacturing the micromesh interproximal device of Claim 11, wherein said fibrillated tape is compression loaded by passing said fibrillated tape through a coating chamber and thereafter passing said coated fibrillated tape between juxtapositioned heated rollers under compression conditions.

13. A micromesh interproximal device according to Claim 5, wherein said oral care coating substance contains cleaners selected from the group consisting of:

sodium lauryl sulfate,
sodium lauryl sarcosinate,
polyethylene glycol stearate,
polyethylene glycol monostearate,
coconut monoglyceride sulfonates,
sodium alkyl sulfate,
sodium alkyl sulfoacetates,
block copolymers of polyoxyethylene and polyoxybutylene,
allylpolyglycol ether carboxylates,
polyethylene derivatives of sorbitan esters,
propoxylated cetyl alcohol,
block copolymers comprising a cogeneric mixture of conjugated polyoxypropylene and
polyoxylethylene compound having as a hydrophobe a

polyoxypropylene polymer of at least 1200 molecular weight,
soap powder,
and mixtures thereof.

14. A micromesh interproximal device according to Claim 5, wherein said oral care coating substance contains Formula Modifiers selected from the group consisting of:

saliva-insoluble formula modifiers, including:
microcrystalline waxes
paraffin wax
carnuba, beeswax and other natural waxes
animal and vegetable fats and oils
low-melt point, orally suitable polymers and copolymers;

saliva-soluble formula modifiers include so-called water soluble waxes, including:
liquid polyethylene glycols
solid polyethylene glycols
liquid polypropylene glycols
solid polypropylene glycols,
triacetin, and
low melt temperature, water-soluble polymers, including:
hydroxyethylcellulose
hydroxypropylcellulose
carboxy derivatives of cellulose and
orally suitable saliva gelling or water-soluble copolymers of various resins.

15. A micromesh interproximal device according to Claim 5, wherein said oral care coating substance contains chemotherapeutic ingredients

selected from the group consisting of:

(1) anti-tartar substances, MICRODENT®, ULTRAMULSION®, tetrasodium pyrophosphate (TSPP), tetrapotassium pyrophosphates, and mixtures thereof;

(2) first generation anti-biofilm agents, oxygenating compounds, quaternary ammonium compounds, phenolic compounds and plant alkaloids selected from the group consisting of:
benzethonium chloride and cetylpyridinium chloride,
thymol and eucalyptol in a mixture of methyl salicylate, benzoic acid and boric acid and phenol,
flavor oils,
sanguinaria extract with zinc chloride, and
triclosan;

(3) second generation anti-biofilm agents, chlorhexidine, alexidine, octenidine and stannous fluoride;

(4) desensitizing agents, NSAIDs, antibiotics, anti-thrush agents, anti-caries agents, antimicrobials, COX-2 agents;

(5) dry mouth relieving agents;

(6) NSAIDs;

(7) antibiotics; and

mixtures thereof.

16. A micromesh interproximal device according to Claim 5, wherein said oral care coating substance contains Soft Abrasives™ selected from the

group consisting of:

dicalcium phosphate (DCP),
pumice,
aluminum silicate,
silica,
glass beads,
titanium oxide,
rice flour,
sodium hexametaphosphate,
quartz,
novaculite,
silicon carbide,
alumina zirconia,
alumina,
polishing alumina,
calcined aluminum oxide,
silicon zirconium oxide, and
mixtures thereof.

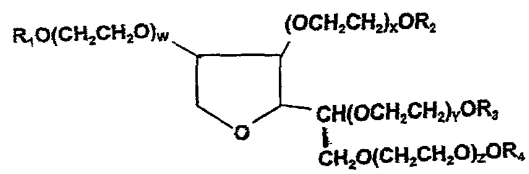
17. A micromesh interproximal device according to Claim 1, where said micromesh structure is selected from the group of structures illustrated in Figs. 1a through 1f and combinations thereof.

18. A micromesh interproximal device according to Claim 6, wherein the additive responsible for maintaining said coating substantially crystal-free and free from substantial flaking is an aliphatic long chain, fatty alcohol selected from the group consisting of:

1-decanol	1-heptadecanol	1-pentacosanol
1-undecanol	1-octadecanol	1-hexacosanol

1-dodecanol	1-nonadecanol	1-heptacosanol
1-tetradecanol	1-eicosanol	1-octacosanol
1-pentadecanol	1-heneicosanol	1-nonacosanol
1-hexadecanol	1-tricosanol	1-triacosanol
1-tetracosanol, and mixtures thereof.		

19. A micromesh interproximal device according to Claim 6,wherein the additive responsible for maintaining said coating crystal-free is a liquid surfactant having the general formula:



wherein R_1, R_2, R_3, R_4 are H or aliphatic acyl groups having from between 10 and 30 carbon atoms, and the sum of w, x, y, and z is from between 20 and 80.

20. A method of cleaning interproximal and subgingival areas of the oral cavity comprising regularly flossing with a shred-resistant, ultra-high molecular weight polyethylene micromesh interproximal device produced by fibrillating stretched polyethylene tape having a tensile strength from between about 0.7 GPa and about 5 GPa, where said polyethylene has an intrinsic viscosity of from between about 5 and about 50 dl/g; and wherein said device is coated with an oral care substance at a load from between about 10 and about 120 mg/yd.

21. A method for treating interproximal and subgingival areas of the oral cavity with chlorhexidine comprising regularly flossing with a micromesh interproximal device compression loaded with a saliva-soluble, crystal-free coating containing Soft Abrasives™ and between about 0.2 and about 2.0

mg/yd of chlorhexidine.

22. A method for treating interproximal and subgingival areas of the oral cavity with stannous fluoride, comprising regularly flossing with a micromesh interproximal device compression loaded with a saliva-soluble, crystal-free coating containing Soft Abrasives™ and between about 1 and about 3 of stannous fluoride.